

# Breast and Cervical Cancer Screening: Sociodemographic Predictors Among White, Black, and Hispanic Women

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Cancer among women is a major public health problem in the United States. Approximately 40% of American women are diagnosed with a nondermatological cancer during their lifetime,<sup>1</sup> and breast cancer is second only to lung cancer as a cause of cancer-related mortality among women.<sup>2</sup> Cervical cancer is the 10th most common cancer among women and accounts for almost 2% of female cancer deaths. The American Cancer Society predicts that approximately 40 200 women will have died from breast cancer and 4400 will have died from cervical cancer in the year 2001.<sup>3</sup>

Racial differences in breast and cervical cancer incidence and mortality rates are well established. Although the rate of breast cancer incidence among White women is higher compared with Black and Hispanic women,<sup>4</sup> Blacks and Hispanics are typically diagnosed at later stages of the disease and have lower survival rates compared with Whites.<sup>5</sup> Blacks and Hispanics also have higher age-adjusted mortality rates from cervical cancer.<sup>6</sup>

Mammography and Papanicolaou (Pap) tests are essential components of early detection and treatment,<sup>7</sup> and mortality rates are substantially decreased when breast and cervical cancers are detected and treated at an early stage.<sup>8–12</sup> Relatively little is known, however, about the predictors of use of cancer screening services among minority women, particularly Hispanics, and few studies have compared the relative influence of sociodemographic, access to care, and health behavior variables among race/ethnicity groups.

Two of the *Healthy People 2010* objectives for women aged 40 years and older are to increase the percentages who report having received (1) a mammogram within the preceding 2 years and (2) a Pap test within the preceding 3 years.<sup>8</sup> In developing population-based interventions to increase the use of cancer screening services, it is important to

**Objectives.** We evaluated the relationship between breast and cervical cancer screening and a variety of variables across race/ethnicity groups.

**Methods.** Using logistic regression models, we analyzed data from the 1998 National Health Interview Survey to assess the relative importance of the independent variables in predicting use of cancer screening services.

**Results.** Having a usual source of care was the most important predictor of cancer screening use for all race/ethnicity groups. Health insurance was associated with an increased likelihood of cancer screening. Smoking was associated with a decreased likelihood of cancer screening.

**Conclusions.** Regardless of race/ethnicity, most women follow mammography and cervical cancer screening guidelines. The identification of specific factors associated with adherence to cancer screening guidelines may help inform screening campaigns. (*Am J Public Health.* 2003;93:618–623)

identify which demographic characteristics are most strongly associated with use. It is also imperative to determine race-specific factors that predict use, especially given the lack of information on cancer screening use among minority women.

Our study explored the relationships among socioeconomic status, access to care, and other predictive factors that are potentially associated with and may have a substantial influence on the likelihood of using cancer screening services within race/ethnicity groups.

## METHODS

### Data Source and Study Population

We used data from the 1998 National Health Interview Survey (NHIS), an ongoing survey of the civilian, noninstitutionalized population of the United States. Detailed in-person interviews are conducted in more than 41 000 households with approximately 107 000 people each year of the survey. Information on health status, health insurance, access to care, and sociodemographic characteristics is collected from all participants, and detailed health information is collected from 1 adult per family to obtain nationally representative estimates. The NHIS survey design oversamples Black and Hispanic populations

to improve the precision of estimates derived from these populations.<sup>15</sup> Our analysis was based on cancer screening data from the adult prevention supplement to the NHIS (response rate=74%).<sup>16</sup>

This analysis was restricted to data from women aged 40 to 64 years. Although Pap tests are universally recommended for women of reproductive age or older, only 6.9% of cervical cancer cases occur in women younger than 35 years.<sup>8</sup> Additionally, cancer screening guidelines recommend mammography as part of routine preventive care beginning at 40 years of age or older.<sup>4</sup> Therefore, we focused specifically on women aged 40 to 64 years, a group at a particularly high risk for both breast and cervical cancer. Women aged 65 years or older were excluded because significant differences in insurance coverage (i.e., the likelihood of having Medicare coverage) separate them from women aged less than 65 years.

### Outcome Variables

Using criteria adopted by the Healthy People 2010 Consortium, we defined the outcomes under investigation as having had a mammogram recently and having had a Pap test recently.<sup>9</sup> Recent mammography was defined as having had a mammogram in the 2 years before the interview. The comparison

group was composed of those women who reported that it was more than 2 years since they had had a mammogram or that they had never had a mammogram. Recent Pap test was defined as having had a pap test within the 3 years before the interview, compared with having had a Pap test more than 3 years earlier or never having had a Pap test.

### Independent Variables

We assessed the following variables as predictors of recent mammogram and recent Pap smear testing: (1) income (less than, greater than, or equal to 200% of the federal poverty level), (2) education (some high school, high school graduate or equivalent, some college or associate's degree, bachelor's degree or above), (3) marital status (married or not married), (4) residence in a metropolitan statistical area (MSA or non-MSA), (5) health insurance coverage (private insurance, Medicaid, or no insurance coverage), (6) self-reported health status (good/excellent or fair/poor), (7) having a usual source of care (yes or no), and (8) cigarette smoking (current smoker or former/never).

Socioeconomic status was unknown for 21% of all individuals. However, many respondents did indicate whether their past-year income was less than, equal to, or greater than \$20 000. Using the responses to this question and that about family size, we were able to categorize 50% of eligible respondents by family income relative to the federal poverty level.

### Analysis

We performed analyses with SUDAAN (Research Triangle Institute, Research Triangle Park, NC) to obtain unbiased estimates from the complex NHIS sample design. In selecting the study sample, we used the following exclusion criteria. Of the 17 655 non-Hispanic White, non-Hispanic Black, or Hispanic women who answered the prevention supplement, 57% were outside our age range of 40 to 64 years. Another 5% did not answer both the mammography and the Pap test questions. Still another 14% were missing 1 or more predictor variables. Exclusion of these individuals yielded a final sample of 5509 subjects.

We evaluated the predictors of recent mammography and Pap test separately for

each race/ethnicity group to examine any differential effects of the independent variables on the likelihood of cancer screening across groups. Because a single analysis of race/ethnicity interactions requires a complex model, multivariate logistic models were constructed separately for non-Hispanic Whites, non-Hispanic Blacks, and Hispanics for each of the 2 outcomes.

We assessed pairwise interactions between the following independent variables for each outcome in each race/ethnicity group: income and education, income and type of insurance, income and usual source of care, type of insurance and usual source of care, health status and education, health status and income, smoking and education, smoking and income, and smoking and usual source of care. Only 3 interactions appeared important ( $P < .10$ ). These were for mammography between health status and education among White women ( $P = .09$ ), between health insurance and having a usual source of care among Hispanic women ( $P = .07$ ), and between smoking and having a usual source of care among Hispanic women ( $P = .03$ ). However, the coefficients on the main-effect variables were changed only slightly when the interaction terms were included in the models. Because substantial statistical influence was observed, we did not include interactions in any of the final models. For each final model, adjusted odds ratios (ORs) and their 95% confidence intervals (CIs) were calculated, and the Wald  $\chi^2$  test was used to assess the influence of each predictor variable.

## RESULTS

Overall, 68.7% (95% CI=67.3, 70.1) of respondents reported having had a mammogram in the preceding 2 years, and 83.0% (95% CI=81.9, 84.1) reported having had a Pap test in the preceding 3 years; 64.8% (95% CI=63.3, 66.3) reported having had both tests within the clinically recommended 2- or 3-year time periods; 13.2% (95% CI=12.2, 14.2) reported having had neither of the tests within the recommended time periods.

Numbers of observations and unadjusted cancer screening rates by race/ethnicity are reported in Table 1. White women had the

highest mammography screening rates with 70.3% (95% CI=68.7, 71.9) reporting a recent mammogram. The self-reported rate of recent mammography among Black women was similar, at 66.7% (95% CI=62.6, 70.8). Hispanic women had the lowest recent mammography rate, at 59.5% (95% CI=55.4, 63.6). Hispanics were also less likely to report a recent Pap test compared with Whites, but this difference was not significant. The unadjusted recent Pap test rate was highest among Blacks, at 85% (95% CI=81.9, 88.1), although the confidence intervals overlapped with the estimates for Whites and Hispanics.

As expected, sociodemographic characteristics varied among race/ethnicity groups (see Table 1). In particular, Black and Hispanic women were significantly more likely than White women to report a family income below 200% of the federal poverty level and to have less than a high school education. White women were much more likely than Black or Hispanic women to be married and to report their health status as good/excellent. White women were also much more likely to have private health insurance coverage, whereas Black and Hispanic women were significantly more likely to be covered by Medicaid or to report having no health insurance coverage.

Tables 2 and 3 show the results of the multivariate logistic regression analyses of the association between the presence or absence of cancer screening and the predictor variables. The adjusted odds ratios of recent mammogram or Pap test are reported for each predictor variable by race/ethnicity.

After adjusting for the other independent variables, having a usual source of care was the most important predictor of recent mammogram or Pap test. The strength of the association was similar across race/ethnicity groups (confidence intervals overlap). Women of all 3 race/ethnicities who reported having a usual source of care were at least 3.6 times as likely to have reported a recent mammogram or Pap test compared with women who did not have a usual source of care.

Based on the results of the logistic models, socioeconomic status—as indicated by income and education—was an important predictor of cancer screening, but the effects of these 2

**TABLE 1—Rates of Selected Characteristics of Women Aged 40 to 64, by Race/Ethnicity: United States, 1998**

|                                     | Non-Hispanic White<br>(n = 3995), % (SE) | Non-Hispanic Black<br>(n = 780), % (SE) | Hispanic<br>(n = 734), % (SE) |
|-------------------------------------|--|---|-------------------------------|
| Recent mammogram                    | 70.3 (0.8)                               | 66.7 (2.1)                              | 59.5 (2.1)                    |
| Recent test                         | 83.4 (0.7)                               | 85.0 (1.6)                              | 79.6 (1.6)                    |
| Has a usual source of care          |  |   |                               |
| No                                  | 6.8 (0.4)                                | 8.5 (1.3)                               | 12.4 (1.3)                    |
| Yes                                 | 93.2 (0.4)                               | 91.5 (1.3)                              | 87.6 (1.3)                    |
| Income                              |  |   |                               |
| Below 200% of federal poverty level | 15.8 (0.6)                               | 43.5 (2.1)                              | 50.9 (2.4)                    |
| Above 200% of federal poverty level | 84.2 (0.6)                               | 56.5 (2.1)                              | 49.1 (2.4)                    |
| Education                           |  |   |                               |
| Less than high school               | 9.7 (0.6)                                | 23.3 (1.8)                              | 45.0 (2.2)                    |
| High school or equivalent           | 32.5 (0.8)                               | 31.4 (1.9)                              | 22.1 (1.8)                    |
| Some college or associate's degree  | 31.8 (0.8)                               | 29.5 (1.9)                              | 21.9 (1.9)                    |
| Bachelor's degree or higher         | 26.1 (0.8)                               | 15.8 (1.5)                              | 11.0 (1.4)                    |
| Health insurance                    |  |   |                               |
| No health insurance coverage        | 9.1 (0.5)                                | 19.2 (1.7)                              | 31.5 (2.2)                    |
| Medicaid                            | 3.4 (0.3)                                | 13.0 (1.3)                              | 13.3 (1.3)                    |
| Private health insurance            | 87.5 (0.6)                               | 67.8 (1.9)                              | 55.1 (2.3)                    |
| Marital status                      |  |   |                               |
| Not married                         | 27.2 (0.7)                               | 60.0 (2.2)                              | 36.4 (2.0)                    |
| Married                             | 72.8 (0.7)                               | 40.0 (2.2)                              | 63.6 (2.0)                    |
| Self-reported health status         |  |   |                               |
| Fair or poor                        | 9.9 (0.5)                                | 23.2 (1.7)                              | 23.2 (1.9)                    |
| Excellent, very good, or good       | 90.1 (0.5)                               | 76.8 (1.7)                              | 76.8 (1.9)                    |
| Cigarette smoker                    |  |   |                               |
| Former/never                        | 75.9 (0.8)                               | 71.3 (1.8)                              | 85.6 (1.4)                    |
| Current                             | 24.1 (0.8)                               | 28.7 (1.8)                              | 14.4 (1.4)                    |
| MSA residence                       |  |   |                               |
| No                                  | 24.8 (1.0)                               | 14.8 (2.0)                              | 9.6 (1.7)                     |
| Yes                                 | 75.2 (1.0)                               | 85.2 (2.0)                              | 90.4 (1.7)                    |

Note. Due to rounding, percentages may not sum to 100%. MSA = metropolitan statistical area.

CI=1.07, 3.89) and White women (OR=2.13; 95% CI=1.33, 3.41). For recent Pap test, the effect of Medicaid coverage was also particularly strong for White women (OR=2.33; 95% CI=1.40, 3.87).

The association between cigarette smoking and likelihood of a recent cancer screening test was fairly consistent across race/ethnicity groups; individuals who were current smokers were less likely to report a recent mammogram or Pap test. When the other independent variables were controlled, MSA residential status, self-reported health status, and marital status were not important predictors of cancer screening among any race/ethnicity group.

## DISCUSSION

Almost 70% of women aged 40 to 64 years in our sample reported having had a mammogram in the past 2 years, and more than 80% reported having had a Pap test in the past 3 years. Hispanic women had lower screening rates for both mammography and Pap tests than did either White or Black women. Little is known about the use of cancer screening services among the US Hispanic population, and few studies have examined differences in predictors of cancer screening use for specific race/ethnicity groups. Our results suggest that although some key differences exist, the relative importance of most of the predictors of cancer screening that we studied was similar among Whites, Blacks, and Hispanics.

Our findings support previous research showing that the strongest single predictor of breast and cervical cancer screening is having a usual source of care.<sup>13,17,18</sup> Even after adjustment for other variables, women who reported having a usual source of care were 4 or more times as likely to report a recent mammogram or Pap test. This association was especially pronounced among Black women. The importance of health insurance coverage and access to care in predicting the use of cancer screening services among Blacks and Hispanics is an especially sobering finding, given that minority women are substantially more likely than White women to be uninsured, to live in poverty, and to report not having a usual source of care.

variables differed by race/ethnicity. Income above 200% of the federal poverty level was a strong predictor of recent mammogram, particularly among Black women (OR=2.93; 95% CI=1.83, 4.71). Income was not, however, a strong predictor of recent Pap test among Black women. Women in all race/ethnicity groups with a bachelor's degree or higher were more than 2.5 times as likely to report a recent Pap test compared with women with less than a high school education. However, this result showed only borderline significance among Hispanic women (OR=2.55; 95% CI=0.97, 6.68). Increased education did not appear to be an important

predictor of recent mammogram among Black and Hispanic women, with all of the odds ratios for education close to 1.0. In contrast, education was a highly significant predictor of both recent mammogram and recent Pap test among White women.

Important racial differences were observed for the influence of health insurance on the likelihood of cancer screening. Private health insurance coverage was associated with an increased likelihood of reporting a recent cancer screening test for women of all 3 race/ethnicity groups. Medicaid coverage was an important predictor of recent mammography use among Black women (OR=2.04; 95%

**TABLE 2—Adjusted Odds Ratios (ORs) of Having a Recent Mammogram, Women Aged 40 to 64, by Race/Ethnicity: United States, 1998**

|   | Non-Hispanic White<br>OR (95% CI) | Non-Hispanic Black<br>OR (95% CI) | Hispanic<br>OR (95% CI) |
|---|-----------------------------------|-----------------------------------|-------------------------|
| Has a usual source of care                |                                   |                                   |                         |
| No  | 1.00                              | 1.00                              | 1.00                    |
| Yes                                       | 3.84 (2.86, 5.16)*                | 6.24 (3.01, 12.92)*               | 3.59 (2.00, 6.46)*      |
| Income                                    |                                   |                                   |                         |
| Below 200% of federal poverty level       | 1.00                              | 1.00                              | 1.00                    |
| Above or at 200% of federal poverty level | 1.56 (1.21, 2.01)*                | 2.93 (1.83, 4.71)*                | 1.53 (0.94, 2.50)       |
| Education                                 |                                   |                                   |                         |
| Less than high school                     | 1.00                              | 1.00                              | 1.00                    |
| High school or equivalent                 | 1.27 (0.96, 1.67)                 | 0.93 (0.52, 1.64)                 | 1.14 (0.71, 1.84)       |
| Some college or associate's degree        | 1.37 (1.04, 1.81)*                | 0.85 (0.47, 1.53)                 | 1.29 (0.75, 2.22)       |
| Bachelor's degree or higher               | 1.56 (1.16, 2.09)*                | 1.16 (0.55, 2.44)                 | 0.94 (0.45, 1.97)       |
| Health insurance                          |                                   |                                   |                         |
| No health insurance coverage              | 1.00                              | 1.00                              | 1.00                    |
| Medicaid                                  | 2.13 (1.33, 3.41)*                | 2.04 (1.07, 3.89)*                | 1.20 (0.67, 2.13)       |
| Private health insurance                  | 2.56 (1.93, 3.38)*                | 1.69 (0.99, 2.87)                 | 2.44 (1.43, 4.15)*      |
| Marital status                            |                                   |                                   |                         |
| Not married                               | 1.00                              | 1.00                              | 1.00                    |
| Married                                   | 1.05 (0.88, 1.24)                 | 0.87 (0.57, 1.31)                 | 0.69 (0.46, 1.03)       |
| Self-reported health status               |                                   |                                   |                         |
| Fair or poor                              | 1.00                              | 1.00                              | 1.00                    |
| Excellent, very good, or good             | 0.72 (0.53, 0.98)*                | 1.03 (0.66, 1.59)                 | 0.85 (0.52, 1.40)       |
| Cigarette smoker                          |                                   |                                   |                         |
| Former/never                              | 1.00                              | 1.00                              | 1.00                    |
| Current                                   | 0.52 (0.44, 0.62)*                | 0.62 (0.42, 0.91)*                | 0.94 (0.59, 1.49)       |
| MSA residence                             |                                   |                                   |                         |
| No  | 1.00                              | 1.00                              | 1.00                    |
| Yes                                       | 1.19 (0.98, 1.45)                 | 1.31 (0.78, 2.21)                 | 1.74 (0.92, 3.27)       |

Note. ORs are adjusted for all other variables in the model. CI = confidence interval.

\* $P < .05$ . All  $P$  values are 2-tailed.

It is important to note that having a usual source of care showed a weaker association with use of cancer screening services among Hispanics than among the other 2 race/ethnicity groups. Previous research has noted that even Hispanics who have a usual source of care are less likely to see a private physician and more likely to go to emergency departments compared with Whites.<sup>19</sup> Thus, although having a usual source of care is an extremely important predictor of cancer screening, its influence may vary by race/ethnicity.

The positive association between mammography use and Medicaid coverage for Black and White women suggests that Medicaid

programs may have successfully increased mammography rates among women aged 40 to 64 years. One possible explanation for these results might be recent efforts of breast cancer screening programs in targeting low-income women, particularly Blacks and Medicaid recipients.<sup>2</sup> Conversely, the lack of association between Medicaid coverage and mammography screening among Hispanic women raises concerns. Additionally, the fact that a positive association between Medicaid coverage and Pap testing was not observed among Blacks or Hispanics suggests that more could be done to increase the use of cervical cancer screening services among minority Medicaid recipients.

Previous studies have also suggested that women of higher socioeconomic status and women with health insurance coverage are more likely to receive preventive care, including breast and cervical cancer screening.<sup>20–22</sup> Our analysis used national data to confirm that for White, Black, and Hispanic women, socioeconomic status was associated with a higher likelihood of reporting a recent mammogram and Pap test.

The persistent negative association between cigarette smoking and cancer screening for all 3 racial/ethnic groups suggests that— independent of access to care, income, education, and other important demographic characteristics—cigarette smoking is an important indicator of failure to use cancer preventive services. This is consistent with previous research that suggests that persons who engage in high-risk behaviors are less likely to comply with recommended cancer screening guidelines.<sup>23</sup> The increased likelihood that smokers will not receive appropriate mammograms and Pap tests is an especially important finding, given that smoking is a risk factor for both breast cancer<sup>24,25</sup> and cervical cancer.<sup>3,26</sup> Thus, smoking may provide an indicator for practitioners to help identify those individuals less likely to have received appropriate cancer screening services.

This study has several strengths, including the large national probability sample of women which contributes to the generalizability of the findings. Furthermore, the sample contained information from a sufficiently large number of Black and Hispanic women to allow for separate analyses of these groups. Minority women, particularly those of Hispanic ethnicity, are often excluded from studies of breast and cervical cancer screening owing to small numbers of observations.

Nevertheless, several factors should be considered in interpreting the results of this study. Foremost among these is the possibility of bias resulting from the use of self-reported data. Several studies have suggested that self-reported data may overestimate the prevalence of cancer screening.<sup>27,28</sup> However, in our analysis we controlled for factors thought to influence the validity of self-reported data, such as income and education. Additionally, the temporality of the observed associations cannot be established



**TABLE 3—Adjusted Odds Ratios (ORs) of Having a Recent Papanicolaou Test, Women Aged 40 to 64, by Race/Ethnicity: United States, 1998**

|   | Non-Hispanic White<br>OR (95% CI) | Non-Hispanic Black<br>OR (95% CI) | Hispanic<br>OR (95% CI) |
|---|-----------------------------------|-----------------------------------|-------------------------|
| Has a usual source of care                |                                   |                                   |                         |
| No  | 1.00                              | 1.00                              | 1.00                    |
| Yes                                       | 4.49 (3.35, 6.02)*                | 6.66 (3.62, 12.26)*               | 3.93 (2.21, 6.98)*      |
| Income                                    |                                   |                                   |                         |
| Below 200% of federal poverty level       | 1.00                              | 1.00                              | 1.00                    |
| Above or at 200% of federal poverty level | 1.87 (1.41, 2.47)*                | 1.04 (0.56, 1.93)                 | 1.98 (1.07, 3.66)*      |
| Education                                 |                                   |                                   |                         |
| Less than high school                     | 1.00                              | 1.00                              | 1.00                    |
| High school or equivalent                 | 1.48 (1.07, 2.04)*                | 0.99 (0.52, 1.90)                 | 0.97 (0.55, 1.69)       |
| Some college or associate's degree        | 1.60 (1.14, 2.23)*                | 1.06 (0.59, 1.93)                 | 2.18 (1.24, 3.83)*      |
| Bachelor's degree or higher               | 2.53 (1.72, 3.73)*                | 2.87 (1.08, 7.62)*                | 2.55 (0.97, 6.68)       |
| Health insurance                          |                                   |                                   |                         |
| No health insurance coverage              | 1.00                              | 1.00                              | 1.00                    |
| Medicaid                                  | 2.33 (1.40, 3.87)*                | 0.86 (0.40, 1.89)                 | 1.17 (0.63, 2.17)       |
| Private health insurance                  | 1.83 (1.35, 2.49)*                | 1.56 (0.86, 2.82)                 | 2.56 (1.40, 4.70)*      |
| Marital status                            |                                   |                                   |                         |
| Not married                               | 1.00                              | 1.00                              | 1.00                    |
| Married                                   | 1.06 (0.85, 1.31)                 | 1.36 (0.80, 2.31)                 | 1.05 (0.66, 1.67)       |
| Self-reported health status               |                                   |                                   |                         |
| Fair or poor                              | 1.00                              | 1.00                              | 1.00                    |
| Excellent, very good, or good             | 0.80 (0.57, 1.13)                 | 1.43 (0.81, 2.51)                 | 1.00 (0.58, 1.70)       |
| Cigarette smoker                          |                                   |                                   |                         |
| Former/never                              | 1.00                              | 1.00                              | 1.00                    |
| Current                                   | 0.68 (0.53, 0.86)*                | 0.90 (0.55, 1.47)                 | 0.57 (0.35, 0.93)*      |
| MSA residence                             |                                   |                                   |                         |
| No  | 1.00                              | 1.00                              | 1.00                    |
| Yes                                       | 1.22 (0.98, 1.52)                 | 1.66 (0.87, 3.19)                 | 1.68 (0.94, 2.99)       |

Note. ORs are adjusted for all other variables in the model. CI = confidence interval; MSA = metropolitan statistical area.

\* $P < .05$ . All  $P$  values are 2-tailed.

screening services to women in Hispanic communities should be considered top priorities. ■

### About the Authors

This analysis was conducted while Elizabeth Selvin was an intern with the Association of Schools of Public Health/Centers for Disease Control and Prevention at the National Center for Health Statistics. Kate M. Brett is with the Office of Analysis, Epidemiology, and Health Promotion, National Center for Health Statistics, Hyattsville, Md.

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### Contributors

E. Selvin designed and conducted the analysis and wrote the article. K.M. Brett contributed to the analysis and edited the article.

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### Human Participant Protection

No protocol approval was needed for this study, as data are publically available and do not contain identifiers.

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owing to the cross-sectional nature of this study.

## CONCLUSIONS

This study indicates the importance of targeting medically underserved women and women who do not have a usual source of care to increase use of cancer screening services. The strong association between screening and having a usual source of care suggests that, although efforts to insure the uninsured may indirectly help increase use of primary care services, a more effective approach may be the direct delivery of preventive care.

Other research has found that many individuals without a usual source of care report that they do not have one because they are not in need of services.<sup>29,30</sup> This is a particularly important issue for attempts to encourage individuals to seek preventive medical care services. Nonetheless, establishing access to primary care for individuals regardless of health status or insurance coverage is a logical starting point for the development of interventions that may increase screening service use and enhance the early detection of cancer. Given the lower overall breast and cervical cancer screening rates among Hispanic women, increasing access to general medical care and direct provision of cancer

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